A Method for Enhancing the Flow of Electrical Charges in Micro-geologic Structures

~~Statement Regarding Federal Sponsored Research and Development:~~

[1] No Federal sponsorship was involved in the development of this invention.

Background of the Invention

[2] This invention relates to electrical and electronic engineering and systems for protecting electrically sensitive equipment from the adverse effects of localized electrical imbalances.

[3] The recent advent of cheap and easy to build Electro-magnetic Pulse (EMP) weapons, of enormous power, gives rise to the possibility that such devices will pose a threat to the kinds of electrically equipment that makes up much of our technological infrastructure.

[4] Detonated at or near ground level and in the vicinity of a computer center or telecommunications exchange such an EMP device can create a powerful electrical charge that travels outward through the ground and which, if in contact with a building's grounding system, is capable of rendering any electrically sensitive devices in the building inert.

[5] In electrical terms, the Earth is considered a general and global conductor of electrical charge. Among electrical and electronic engineers, the Earth is considered the final drain for all electrical charges and hence is referenced as the "neutral", the "ground", or the "earth", in all cases of electrical and electronic engineering. Almost every electrical and electronic artifact is connected to the "ground" as a final drain for all electrical charges, or as a zero reference point for measuring the electrical charge in a place or artifact. The Earth, and its micro-geologic structures, are not always homogenous and

effective conductors of electrical charges. Scientists such as Franklin, Faraday, Ampere, and others, have shown that even in good electrical conductors, electrical charges can be concentrated in certain regions of the conducting medium.

[6] The micro-geologic structures near the surface of the Earth where we live and build consist of powdered rock of varying granularity, rocks, biological products, minerals, salts, water, and other miscellaneous materials. The electrical conductivity of this geology varies from place to place, even places inches apart. The ability of the Earth to dissipate a concentrated electrical charge is directly proportional to the electrical connectivity of the micro-geologic structures. ~~This is very visible when a concentrated area of electrical charge results in a lightening discharge~~. Since many structures and artifacts are connected to the Earth as a neutral conductor, and electrical drain of last resort, these structures and artifacts can be adversely affected by sudden localized changes of electrical charge in the micro-geologic regions that surround them.

[7] This invention creates a more conductive, and more predictive, path for the flow of electrical charges in micro-geologic regions for the flow of adverse electrical charges that can develop in micro-geologic regions due to the detonation of EMP weapons at or near ground level.

Brief Summary of the Invention

[8] This invention provides an enhanced path for electrical charges by using a more conductive material placed around a selected geological region of less conductive ability. In the event of a sudden electrical imbalance in or near the micro-geologic region protected by this invention, the conductor embedded in the ground will offer the flow of electrons a path of less resistance around and away from the protected micro-geologic region and any artifact within the protected space. This invention utilizes no atmospheric elements.

Statement of Prior Art

~~We cannot find any reference to prior art that relates or describes any similar invention.~~

[9] Although not related to this art, certain prior art does attempt to control the flow of electrical charges in certain designated micro-geologic regions and the atmospheres above them by attracting significant electrical fluctuations, in the form of lightning, to the space the art is trying to protect. These so-called lightning arrestors function by encouraging atmospheric lightning, and the associated electrical charges, to pass through a designated conductor and thereby pass enormous electrical currents and their related electromagnetic fluctuations through the so-called protected space.

[10] Some of the prior art that does this are, Prescott (303,591), Kretzer (1,098,738), Dodd (1,155,648), Gunthorpe (1,175,749), Carpenter (4,180,698) and Briet (5,365,398).

[11] Each of these inventions require at least one sharply pointed conductor positioned above ground so as to create an electrical stream between the electrically imbalanced earth below and the electrically imbalanced atmosphere. As a result these devices would tend to attract the massive electrical fluctuations of a potentially destructive EMP electrical discharge to the grounding systems of a region or artifact and, since most modern electrical equipment is connected to the grounding system, into the electrical riser system of any nearby artifact.

[12] The purpose and method of this invention is to move potentially destructive subterranean electrical imbalances away from the protected region.

Brief Description of the Drawings

[13] Figure 1 is a conceptual diagram of the invention. ~~Item 1 is conductive material forming a perimeter of the selected micro-geologic region, indicated as item 2. Item 3 indicates the level of the surface of the Earth and is shown here as a point of reference. Item 4 depicts a possible artifact, such as a building, that could be partially buried in the selected micro-geologic region.~~ A conductive material (Item 1) forms a perimeter of the selected micro-geologic region (Item 2) at or below the surface of the ground (Item 3). A possible artifact (Item 4) such as a building could be partially buried in the selected micro-geologic region.

[14] Figure 2 is an electrical schematic of the invention. The invention uses a conductive material in close physical contact with the surrounding micro-geologic region and is grounded (electrical term) by physical contact with the local geology in one place or in a plurality of places.

[15] Figure 3 shows a preferred embodiment of the invention. In this scenario an EMP weapon (Item 1) is detonated near the ground between two high-rise buildings (Item 2 and Item 3). An electrical imbalance of very high electrical potential (Item 4) is induced in the conductive soil and spreads out horizontally in all directions. In one case a protective system built to the specifications of this invention (Item 5) carries the electrical charge away from the protected region and dissipates the electrical charge into the geologic regions beyond the protected building. In the other case expanding electrical imbalance (Item 4) reaches the electrical system of the unprotected building (Item 3) raising the electrical "ground" potential.

Abstract of the Invention

[16] The system and methodology of this invention enhances the flow of electrical charges in selected micro-geologic regions by providing a more conductive material, in direct contact with the local geology, which provides a path of less resistance and greater surface area. Localized electrical charges that come in contact with this invention are, because of its generally convex shape, distributed to all parts of the surface of the invention and are transferred to other geologic regions through physical contact.]

CLAIMS:

Claim 1 (Modified)

[1] We claim that this invention will provide enhanced conductivity for electrical charges in micro-geologic regions of less electrical charge conductive ability, by

[1A] ~~using~~ providing a more conductive material or plurality of more conductive materials to surround selected micro-geological regions in a convenient geometry ~~with said conductive material or plurality of more conductive materials configured in any geometry in any physical plane, and~~

[1B] with said more conductive material or plurality of more conductive materials connected to themselves or to each other, in the case of plurality of more conductive materials, so as to create a single electrical entity, and

[1C] with said electrical entity having physical contact with the micro-geologic region in one location or a plurality of locations.

Claim 2 (Modified)

[2] We claim that this invention will enhance the flow of electrical charges in micro-geologic regions of less electrical charge conductive ability, by

[2A] providing a more conductive path for the flow of electrical charge through the use of more conductive material,

[2B] with said conductive material configured ~~according to selected~~ in a convenient geometry to electrically encompass selected micro-geologic regions, and

[2C] providing a singular point of electrical contact or a plurality of points of electrical contact with the micro-geologic region.

Claim 3 (Modified)

[3] We claim that this invention will provide a more predictive and more conductive path for electrical charges in areas of less natural electrical conductivity by

[3A] introducing a more conductive material into a selected region of less conductive geology

[3B] with said conductive material configured to provide a conductive perimeter around a selected micro-geologic region, and

[3C] with said more conductive material having a singular point of contact with the less conductive micro-geology or a plurality of points of electrical contact with the less conductive micro-geology.